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February 1, 2010**CONFIDENTIAL****TO EXAMINER: Corrielus, J.B.****FAX #: 571 273 3020****GROUP ART UNIT: 2611****ADDRESS: U.S. Patent and Trademark Office****P.O. Box 1450, Alexandria, VA 22313-1450****EXAMINER PHONE: 571 272 3020**Attorney docket no. NL040409US1Application Serial No. 10/599,989Filed October 17, 2006Entitled: ***Reconfigurable Pulse Detector in Wireless Communications System***

Transmitted herewith is/are the following:

1. Propose response to Final Office Action

5 PAGE(S) TO FOLLOW THIS COVER SHEET***IF YOU DO NOT RECEIVE THE CORRECT NUMBER OF PAGES,
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Van Der Weide, G. CONFIRMATION No.: 7910
SERIAL NO.: 10/599,989 EXAMINER: Corrielus, J. B.
FILED: October 17, 2006 ART UNIT: 2611
ATTN. DOC NO.: NL040409US1
FOR: **RECONFIGURABLE PULSE DETECTOR IN
WIRELESS COMMUNICATIONS SYSTEM**

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AFTER FINAL OFFICE ACTION

Dear Sir:

In response to the Final Office Action dated October 1, 2009, the Applicant hereby submits this paper within four (4) months (up to and including **February 1, 2010**) of the mailing date of the Office Action, and requests amendment of the above-identified application as follows wherein:

Amendments made to the Claims begin on page 2, and

Remarks begin on page 7.

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IN THE CLAIMS:

Kindly replace the claims of record with the following full set of claims:

1. (Currently amended) A radio receiver, comprising:
 - a pulse generator, for generating pulses based on an expected received signal;
 - a multiplier, for multiplying a received signal by the generated pulses; and
 - a circuit for receiving the multiplier output, wherein said circuit is for operating in a first mode as a low-pass filter, and for operating in a second mode as an integrator, wherein said circuit operates in said second mode after the generated pulses are locked to the received signal.
2. (original) A receiver as claimed in claim 1, comprising an analog-to-digital converter, for receiving an output from said circuit.
3. (original) A receiver as claimed in claim 1, wherein said circuit includes an analog-to-digital converter.
4. (Currently amended) A radio receiver, comprising:
 - a pulse generator, for generating pulses based on an expected received signal;
 - a multiplier, for multiplying a received signal by the generated pulses; and
 - a circuit for receiving the multiplier output, wherein said circuit is for operating operable in a first mode to act as a low-pass filter, and for operating ~~wherein said circuit is operable in a second mode to act as an integrator ,~~ ~~wherein said circuit includes an analog-to-digital converter, and~~ wherein said circuit comprises a sigma-delta analog-to-digital converter having a feedback loop, and an integrator, wherein, in said first mode, said integrator is included in said feedback loop of said sigma-delta analog-to-digital converter, and, in said

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second mode, the output of the multiplier is connected to the integrator, and the integrator output is connected to the sigma-delta analog-to-digital converter.

5. (Currently amended) A radio receiver, comprising:

- a pulse generator, for generating pulses based on an expected received signal;
- a multiplier, for multiplying a received signal by the generated pulses; and
- a circuit for receiving the multiplier output, wherein said circuit is for operating operable in a first mode to act as a low-pass filter, and for operating wherein said circuit is operable in a second mode to act as an integrator

means for ~~detecting when the receiver has synchronized to a received pulse sequence, and for controlling said receiver to operate in said first mode before it has~~ the generated pulses are synchronized to a received pulse sequence, and to operate in the second mode when it has the generated pulses are synchronized to [[a]] the received pulse sequence.

6. (Currently amended) A method of operating a radio receiver, comprising:

- multiplying a received signal by a sequence of generated pulses;
- in a first mode, applying a multiplication output to a low-pass filter, and
- in a second mode, applying the multiplier output to an integrator, after the generated pulses are determined to be synchronized to the received signal.

7. (Previously presented) A method of operating a radio receiver, comprising:

- multiplying a received signal by a sequence of generated pulses;
- in a first mode, applying a multiplication output to a low-pass filter, and
- in a second mode, applying the multiplier output to an integrator
- detecting when the receiver has synchronized to a received pulse sequence;
- operating the receiver in said first mode before it has synchronized to a received pulse sequence, and

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- operating the receiver in the second mode when it has synchronized to a received pulse sequence.

8. (Currently amended) A method as claimed in claim [[6]] 7, comprising generating said sequence of pulses in a form corresponding to pulses in an expected received signal.

9. (Currently amended) A method as claimed in claim [[6]] 7, for receiving an Ultra Wideband radio signal.

10. (Currently amended) A wireless communications system, comprising:

- a radio transmitter, for generating and transmitting a radio signal; and
 - a radio receiver, wherein the radio receiver comprises:
 - a pulse generator, for generating pulses based on an expected received signal;
 - a multiplier, for multiplying a received signal by the generated pulses;
- and
- a circuit for receiving the multiplier output, wherein said circuit is for operating in a first mode to act as a low-pass filter, and for operating in a second mode to act as an integrator, wherein said circuit operates in said second mode after the generated pulses are locked to the received signal.

11. (original) A wireless communications system as claimed in claim 10, wherein said receiver further comprises an analog-to-digital converter, for receiving an output from said circuit.

12. (original) A wireless communications system as claimed in claim 10, wherein said circuit includes an analog-to-digital converter.

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13. (Currently amended) A wireless communications system comprising, wherein ~~said circuit comprises:~~

- a radio transmitter, for generating and transmitting a radio signal; and
 - a radio receiver, wherein the radio receiver comprises:
 - a pulse generator, for generating pulses based on an expected received signal;
 - a multiplier, for multiplying a received signal by the generated pulses;
- and

- a circuit for receiving the multiplier output, wherein said circuit is for operating in a first mode to act as a low-pass filter, and wherein said circuit is for operating in a second mode to act as an integrator, wherein said circuit includes ~~an analog-to-digital converter~~

a sigma-delta analog-to-digital converter having a feedback loop, and an integrator, wherein, in said first mode, said integrator is included in said feedback loop of said sigma-delta analog-to-digital converter, and, in said second mode, the output of the multiplier is connected to the integrator, and the integrator output is connected to the sigma-delta analog-to-digital converter.

14. (Currently amended) A wireless communications system~~[[,]]~~ comprising:

- a radio transmitter, for generating and transmitting a radio signal; and
 - a radio receiver, wherein the radio receiver comprises:
 - a pulse generator, for generating pulses based on an expected received signal;
 - a multiplier, for multiplying a received signal by the generated pulses;
- and

- a circuit for receiving the multiplier output, wherein said circuit is for operating in a first mode to act as a low-pass filter, and wherein said circuit is for operating in a second mode to act as an integrator, wherein said circuit includes an analog-to-digital converter, and

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wherein said receiver further comprises means for ~~detecting when the receiver has synchronized to a received pulse sequence, and for controlling said receiver to operate in said first mode before it has~~ the generated pulses are synchronized to a received pulse sequence, and to operate in the second mode when ~~it has~~ the generated pulses are synchronized to ~~[[a]]~~ the received pulse sequence.

DRAFT for Discussion ONLY

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REMARKS

The Office Action mailed October 1, 2009 has been reviewed and reconsideration of the above-identified application is respectfully requested in view of the following amendments and remarks.

Claims 1-14 are pending and stand rejected.

Claims 1, 4, 5, 6, 7, 10, 13 and 14 are independent claims.

Claims 1, 4, 5, 6, 7, 8, 9, 10, 13 and 14 have been amended.

Claims 4-5 and 13-14 are objected to but would be allowable if amended to overcome the objection.

Claim 7 is allowed.

Claims 4-5 and 13-14 are objected to for including informalities. Claims 1-3, 6 and 8-12 stand rejected under 35 USC 103(a) as being unpatentable over Miller (WO01/93444) in view of Maio (USP no. 4,578,646).

With regard to the objection to claims 4-5 and 13-14, applicant thanks the Examiner for his observation and has amended the claims to correct the errors noted.

With regard to the objection to the "means plus function" language in the claims, applicant submits that Figure 2 illustrates a timing generator, which provides a series of local pulses used to synchronize the received signal and able to control the pulses to synchronize the received pulse signals. (see page 3, lines 9-11 "The timing generator 18 can therefore control the pulse shaper 20 so that the pulses become synchronized with the received signals."). In addition, signals are provided from the timing generator to digital signal processor (DSP) which provides a control signal to integrator/filter block 22.

In addition, Figure 6, step 106, refers to a method for determining whether a "lock" (i.e., synchronization) has occurred with the received signal. The specification further refers to a patent application WO0014910 to show that such synchronization was well-known in the art.

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Applicant submits that for the discussion regarding the timing generator/DSP and the reference to a known method of synchronization, there is sufficient teaching in the specification and drawings to enable one skilled in the art to understand the means for determining a locking condition, as is recited in the claims.

However, notwithstanding the above argument, applicant has elected to remove the claim language regarding "means for determining synchronization..." The removal of this claim element does not alter the scope of the invention claimed.

For the amendments made to the claims, applicant submits that the reason for the objection has been overcome.

In addition, in view of the indication of allowable subject matter in claim 7, applicant has amended independent claims 1, 6, and 10 to further recite the element that the second mode of operation occurs after synchronization or locking of the generated pulse signals with the received signal is determined. No new matter has been added. Support for the amendment may be found at least in claim 7.

For the amendments made to the claims, applicant believes that all the independent claims are in allowable form

With regard to the rejection of claims 1-3, 6 and 8-12 under 35 USC 103(a) as being unpatentable over Miller in view of Maio, applicant respectfully disagrees with and explicitly traverses the rejection of the claims.

However, in order to advance the prosecution of this matter, applicant has amended the independent claims to refer to the second mode of operation occurring after synchronization between the generated pulse signals and the received signal has been achieved.

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Neither Miller nor Maio disclose the operation of the second mode after synchronization has occurred.

Applicant submits that for the amendments made to the independent claim, each of the independent claims, and the claims dependent therefrom, is a form indicated to be allowed. Applicant respectfully requests that the rejection be withdrawn.

For the amendments made to the claims and for remarks made herein, applicant submits that the reason for the rejection of the claims has been overcome and respectfully requests that the rejections be withdrawn and a Notice of Allowance be issued.

Applicant denies any statement, position or averment stated in the Office Action that is not specifically addressed by the foregoing. Any rejection and/or points of argument not addressed are moot in view of the presented arguments and no arguments are waived and none of the statements and/or assertions made in the Office Action is conceded.

Applicant makes no statement regarding the patentability of the subject matter recited in the claims prior to this Amendment and has amended the claims solely to facilitate expeditious prosecution of this patent application. Applicant respectfully reserves the right to pursue claims, including the subject matter encompassed by the originally filed claims, as presented prior to this Amendment, and any additional claims in one or more continuing applications during the pendency of the instant application.

Although the instant Office Action has been made Final, the amendments to the claims should be entered as the amendments place the claims in a form indicated to be allowable.

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Accordingly, pursuant to MPEP 714.13, applicant's amendments should only require a cursory review by the Examiner. The amendments should therefore be entered without requiring a showing under 37 CFR 1.116(b).

In the event the Examiner deems personal contact desirable in the disposition of this case, the Examiner is invited to call the undersigned attorney at the telephone given below.

No fees are believed necessary for the timely filing of this paper. However, the Examiner is authorized to charge Deposit Account No. _____, if any fees are necessary.

Respectfully submitted,
Michael E. Belk, Reg.No. 33357

Date: January 13, 2010

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